

1                                    ABSTRACT OF THE DISCLOSURE

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3    The invention includes, in one embodiment, a system for monitoring a plurality

4    of cell voltages of an electrochemical device for a plurality of cells connected

5    in series, the system including: a plurality of connecting pins for removable

6    connection across the plurality of cells; a plurality of differential amplifiers,

7    each differential amplifier having a plurality of laser wafer trimmed resistors

8    providing matching, so that common mode signals are rejected, while

9    differential input signals are amplified, each differential amplifier having two

10   inputs and one output, where the inputs are each connected to the plurality of

11   connecting pins; a switching network having a plurality of inputs and one

12   output, the inputs of the switching network connected to the outputs of the

13   differential amplifiers; not more than one analog to digital converter per 16

14   cells having an input connected to the output of the switching network and

15   adapted to provide digital values indicative of the voltages measured by the

16   plurality of differential amplifiers; and a power supply to supply regulated

17   power to at least one electrical circuit consisting of the differential amplifiers,

18   switching network, and mixtures thereof, where the power supply derives its

19   power from the plurality of cells.